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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,080	11/10/2005	Samuel Boutin	271227US2XPCT	6201

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EXAMINER
CHEN, GEORGE YUNG CHIEH

ART UNIT	PAPER NUMBER
3628	

NOTIFICATION DATE	DELIVERY MODE
09/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/532,080	BOUTIN ET AL.
	Examiner	Art Unit	
	George Chen	3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 November 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>9-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>9-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>10 November 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>06/24/2005</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20080823

DETAILED ACTION

This communication is a non-final action in response to preliminary amendment filed on

11/10/2005. Claims 9-16 are pending.

Priority

The application claims benefit of PCT/FR03/03109 filed on 10/21/2003. Receipt is

acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed

of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 06/24/2005 is in compliance

with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being

considered by the examiner.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

Claims 9-15 are rejected under 35 U.S.C. 101 as being non-statutory subject matter.

In order for a method to be considered a "process" under §101, a claimed process must

either: (1) be tied to another statutory class (such as a particular apparatus) or (2) transform

underlying subject matter (such as an article or materials). *Diamond v. Diehr*, 450 U.S. 175, 184

(1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70

(1972). If neither of these requirements is met by the claim, the method is not a patent eligible

process under §101 and is non-statutory subject matter.

As per claim 9, the Applicant discloses a method comprising obtaining parameter,

identifying routing, evaluating cost, determining valid routing; these steps are neither tied to

another statutory class nor transform underlying subject matter; thus, rendering the claim non-

statutory.

Claims 10-14 are dependent from claim 9 and are therefore rejected for similar reasoning

as set forth above.

MPEP 2173.05(p) states a single claim which claims both an apparatus and the method

steps of using the apparatus may be rejected under 35 U.S.C. 101 based on the theory that the

claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two

different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set

forth the statutory classes of invention in the alternative only.

As per claim 15, the Applicant discloses a manufactured article in the preamble;

however, claim 15 is dependent on a method claim: claim 9; thus, rendering the claim claiming

both apparatus and method.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shropshire (WO 02/059801 A2) in view of Alibozek (Alibozek, Tim, Smart software builds a better harness, Machine Design, vol 70, no 8, pages 89-92, 1998).

As per claim 9, Shropshire discloses a method for synthesis of a routing, comprising:

- ✓ a) obtaining parameters of:

  - ○ different configurations of service variants and calculator variants (Shropshire, page 6, design is split into modules that roughly map to the options available to the customer. there is a virtual parent harness which includes all possible modules) and a percentage occurrence of the configurations, a sum of proportions of the configurations being considered equal to one,

  - ○ cost characteristics of components stored and weighted as a function of their respective installation proportions (Shropshire, page 7, amount of material needed is a function of the modules chosen and can usually be approximated),

  - ○ partial or complete mapping of service variants onto calculator variants (Shropshire, page 6, design is split into modules that roughly map to the options available to the customer. there is a virtual parent harness which includes all possible modules),

- ✓ b) identifying valid routings (Shropshire, page 5, wiring harness design is analyzed and module data is created automatically);

✓   c) evaluating routing cost of the valid routings for each configuration (Shropshire,

page 7, amount of material needed is a function of the modules chosen and can

usually be approximated); and

Shropshire does not explicitly disclose a percentage occurrence of the configurations, a

sum of proportions of the configurations being considered equal to one and d) determining the

valid routing that minimizes the mean, weighted by the installation proportions of each

configuration, of the routing costs for each configuration. Alibozek teaches identifying all

possible occurrences (Alibozek, page 92, a smart algorithm explores all possible paths) and

determining optimized routing (Alibozek, page 92, algorithms derived from user input data

automatically optimize the wire harness for its environment by balancing cost).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of

the invention to combine method of synthesis routing with determining optimized routing and for

the purpose to tailor automobiles to their own specification and accelerate design process

(Shropshire: page 3; Alibozek: page 89).

As per claim 10, Shropshire discloses a method according to claim 9, but does not

explicitly disclose wherein a quality characteristic expressed as breakdowns per million is

considered to compare respective measures of two candidate architectures for a product plan.

Alibozek teaches using quality characteristic to compare respective measures of two candidate

architectures for a product plan (Alibozek, page 92, the choice of wire, connectors, and

associated parts can have a significant impact of harness costs, quality, and weight. software can

explore trade-offs using a routine and makes suggestions to improve harness).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of

the invention to combine method of synthesis routing with using quality characteristic to

compare respective measures of two candidate architectures for a product plan for the purpose to

tailor automobiles to their own specification and accelerate design process (Shropshire: page 3;

Alibozek: page 89).

As per claim 11 Shropshire discloses a method according to claim 10, but does not

explicitly disclose wherein one of the quality characteristics considered is weight. Alibozek

teaches using weight to compare respective measures of two candidate architectures for a

product plan (Alibozek, page 92, the choice of wire, connectors, and associated parts can have a

significant impact of harness costs, quality, and weight. software can explore trade-offs using a

routine and makes suggestions to improve harness).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of

the invention to combine method of synthesis routing with using weight to compare respective

measures of two candidate architectures for a product plan for the purpose to tailor automobiles

to their own specifications and accelerate design process (Shropshire: page 3; Alibozek: page

89).

As per claim 12, Shropshire discloses a method according to claim 9, but does not

explicitly disclose further comprising automatically calculating a cost of assembly of electrical

and electronic architecture as a function of a cost of assembly of a strand on a zone, of a cost of

assembly of a connector on a zone boundary or on a zone, of a cost of assembly of a calculator

on a zone, of a cost of assembly of a sensor or actuator on a zone, and of a cost of connection of

a connector between zones or in a zone. Shropshire, however, discloses calculating cost by

calculating adding costs of individual modules (Shropshire, page 7, cost of the individual

modules are added together).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of

the invention to make the obvious variation from adding cots of individual models to using cost

function of strand, connector, calculator, sensor, actuator and/or connector.

As per claim 13, Shropshire discloses a method according to claim 9, but does not

explicitly disclose further comprising synthesizing optimal routing for all configurations, by

repeating operations a) to d), criterion for minimization being a cost composed of: an estimated

recurrent cost of parts, an estimate of quality cost in anticipation of the cost of repair per zone,

this quality cost being increased by a constant cost depending on the zone and its ease of access,

an estimate of the cost of weight, taking into account mechanical wear and consumption related

to an increase of the weight of the vehicle, and/or an estimate of the cost of assembly. Alibozek

teaches an estimate of the cost of weight, taking into account mechanical wear and consumption

related to an increase of the weight of the vehicle (Alibozek, page 91, Weight is often an issue in

vehicles, but it also determines how to fasten a harness to a chisis, for example, large harnesses

that are not fastened securely can stress connection points and break under low-level shock and

vibration).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of the invention to combine method of synthesis routing with an estimate of the cost of weight, taking into account mechanical wear and consumption related to an increase of the weight of the vehicle for the purpose to tailor automobiles to their own specifications and accelerate design process (Shropshire: page 3; Alibozek: page 89).

As per claim 14, Shropshire further discloses a method according to claim 9, applied to synthesis of the electrical architecture of a newly created product or to synthesis of an electrical architecture modified relative to a previous architecture (Shropshire, page 6, a core harness and a set of option modules).

As per claim 15, Shropshire further discloses a manufactured article comprising: a computer storage means having a computer program **for** synthesizing a routing, wherein the computer program comprises a code for execution of the method defined in claim 9 (Shropshire, page 17, copy all data to the new module).

As per claim 16, Shropshire discloses a device for synthesis of a routing, comprising:
- ✓ a) means for obtaining parameters of:
    - o different configurations of service variants and calculator variants and a percentage occurrence of the configurations, a sum of proportions of the configurations being considered equal to one (Shropshire, page 6, design is split into modules that roughly map to the options available to the

customer. there is a virtual parent harness which includes all possible

modules),

    o   cost characteristics of components stored and weighted as a function of

       their respective installation proportions (Shropshire, page 7, amount of

       material needed is a function of the modules chosen and can usually be

       approximated),

    o   partial or complete mapping of service variants onto calculator variants

       (Shropshire, page 6, design is split into modules that roughly map to the

       options available to the customer. there is a virtual parent harness which

       includes all possible modules),

✓ b) means for identifying valid routings (Shropshire, page 5, wiring harness design

    is analyzed and module data is created automatically);

✓ c) means for evaluating routing cost of the valid routings for each configuration

    (Shropshire, page 7, amount of material needed is a function of the modules

    chosen and can usually be approximated); and

Shropshire does not explicitly disclose a percentage occurrence of the configurations, a

sum of proportions of the configurations being considered equal to one and d) means for

determining the valid routing that minimizes the mean, weighted by the installation proportions

of each configuration, of the routing costs for each configuration. Alibozek teaches means for

identifying all possible occurrences (Alibozek, page 92, a smart algorithm explores all possible

paths) and means for determining optimized routing (Alibozek, page 92, algorithms derived from

user input data automatically optimize the wire harness for its environment by balancing cost).

Therefore, it would have been obvious for one with ordinary skill in the art at the time of the invention to combine device of synthesis routing with means for determining optimized routing for the purpose to tailor automobiles to their own specification and accelerate design process (Shropshire: page 3; Alibozek: page 89).

Please Note:

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *e.g. In re Collier*, 158 USPQ 266, 267 (CCPA 1968)

Examiner has marked examples of intended use languages in **bold** as a courtesy to the Applicant.

Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Chen whose telephone number is (571)270-5499. The examiner can normally be reached on Mon-Thu 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Hayes can be reached on (571)272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

G.C.

/JOHN W HAYES/
Supervisory Patent Examiner, Art Unit 3628